

## Triple Isotope Water Analyzer for Extraplanetary Studies, Phase II

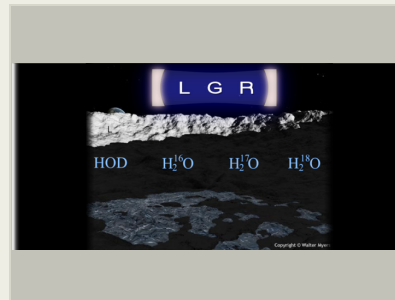
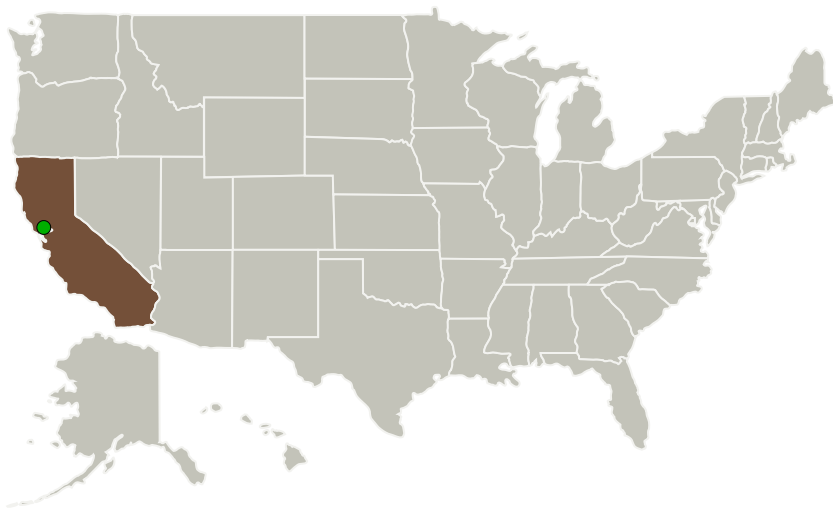
Completed Technology Project (2013 - 2016)



## Project Introduction

Los Gatos Research (LGR) proposes to employ Off-Axis ICOS to develop triple-isotope water analyzers for lunar and other extraplanetary exploration. This instrument will provide highly accurate quantification of dD, d18O, and d17O to better than  $\pm 0.3$  ‰,  $\pm 0.1$  ‰, and  $\pm 0.15$  ‰ respectively with minimal calibration or consumable standards. Moreover, due to the inherent benefits of Off-Axis ICOS, the analyzer will be selective, robust, and economical. In addition to being a strong candidate for extraplanetary exploration, the instrument will be deployed for field testing and research by scientists in NASA's Space Science and Astrobiology Division.

## Primary U.S. Work Locations and Key Partners



Triple Isotope Water Analyzer for Extraplanetary Studies, Phase II

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Organizations Performing Work	Role	Type	Location
Los Gatos Research	Lead Organization	Industry	Mountain View, California
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

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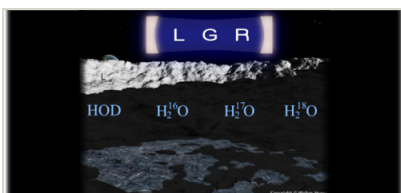
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## Primary U.S. Work Locations

California

## Images



### Briefing Chart Image

Triple Isotope Water Analyzer for Extraplanetary Studies, Phase II  
(<https://techport.nasa.gov/image/136781>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Los Gatos Research

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

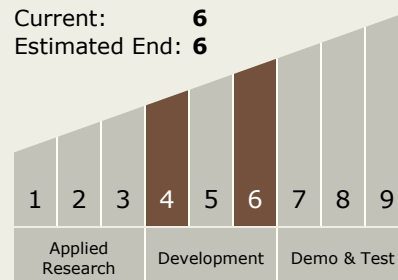
Carlos Torrez

### Principal Investigator:

Manish Gupta

## Technology Maturity (TRL)

Start: 4  
Current: 6  
Estimated End: 6



# Triple Isotope Water Analyzer for Extraplanetary Studies, Phase II

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## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.1 Remote Sensing Instruments/Sensors
    - └ TX08.1.5 Lasers

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System